DOCUMENT RESUME

ED 231 053 EA 015 716

TITLE	An Administrator's Handbook for PCMP: Pennsylvania Comprehensive Mathematics Plan. Direction for the 80's.
INSTITUTION	Pennsylvania State Dept. of Education, Harrisburg.
PUB DATE	82
NOTE	99p.; This document was produced under basic skills contract #1-25-230-004, PCMP/PRIMES, Central Susquehanna Intermediate Unit 16, Lewisburg, Pennsylvania.
PUB TYPE	Guides - Non-Classroom Use (055) -- Tests/Evaluation Instruments (160)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	Administrator Guides; Check Lists; *Educational Improvement; Elementary Secondary Education; *Improvement Programs; *Mathematics Education; Needs Assessment; Planning; Program Design; Program Evaluation; *Program Implementation; Questionnaires; Worksheets
IDENTIFIERS	*Pennsylvania Comprehensive Mathematics Plan

ABSTRACT

This handbook for administrators of school district mathematics programs outlines a set of procedures for implementing the Pennsylvania Comprehensive Mathematics Plan (PCMP) and provides a degree of standardization and a planning framework to encourage the communication of related ideas and successes. The procedural steps, instruments, checklists, and worksheets for PCMP implementation are presented in four sections. The first section covers the need for an effective mathematics program. The next section deals with needs assessment questionnaires covering school goals, staff development, and school evaluation. Section three outlines procedures for an administrator, in conjunction with the superintendent, to propose improvements in such matters as activities, costs, personnel, and schedules. The last section covers the tracking of proposal implementation by means of professional, school, and program evaluations. Three appendixes provide sample documents and forms as well as references. Sample documents include guidelines for long-range planning, a proposal to utilize the Pennsylvania mathematics education information retrieval system, procedures for curriculum development, and a request to conduct a pilot project. Sample forms include transparency masters for PCMP presentations, and needs assessment, budget, and district evaluation forms. (PB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 231053

AN ADMINISTRATOR'S HANDBOOK FOR

[illegible]

PERMANENT

SCOPE OF INTEREST NOTICE

The ERIC Facility has assigned this document for processing to: CEM SE

In our judgement, this document is also of interest to the clearinghouses noted to the right. Indexing should reflect their special points of view.

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

K. Dayer

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

EA 015 716

An Administrator's Handbook for PCMP

Pennsylvania Comprehensive Mathematics Plan

Pennsylvania Department of Education 1982

This document was produced under P.L. 95-561, Title II - Basic Skills Improvement. The information expressed herein does not necessarily reflect the position or policy of the U.S. Department of Education, and no official endorsement by U.S. Department of Education should be inferred.

Cover designed by Jan Shaull

Commonwealth of Pennsylvania
Dick Thornburgh, Governor

Department of Education
Robert G. Scanlon, Secretary

Office of Basic Education
William H. Isler, Acting Commissioner

Bureau of Curriculum and Instruction
David C. Campbell, Director

Division of Quality Goals and Instruction
Helen A. McLain, Chief
Doris E. Creswell, Mathematics Education Adviser

Pennsylvania Department of Education
333 Market Street, P.O. Box 911
Harrisburg, PA 17108

Copyright © 1982 by the Pennsylvania Department of Education. All rights reserved. Printed in the United States of America.

ACKNOWLEDGMENTS

This handbook is based on the collective experience of selected school district administrators in the Commonwealth of Pennsylvania who have implemented effective curricula, instructional programs and evaluation programs in mathematics.

The first draft was written by Emanuel Berger, Kenneth Calkin, Doris Creswell and Nancy Jones. The final draft is the result of two conferences convened for reviewing, deliberating and rewriting the publication. In addition, there were several telephone conferences, including two with the PCMP author, M. Vere DeVault.

The contributions of all individuals and agencies involved are gratefully acknowledged and deeply appreciated.

Conference Participants

Joanne Bennett
Elementary Supervisor
Williamsport Area School District

Emanuel Berger
Consultant
PCMP/PRIMES CSIU 16

Melvin Bollinger
Curriculum Director K-6
Parkland School District

William Brodsky
Coordinator of Executive Institute
Office of Staff Leadership and Development
School District of Philadelphia

Kenneth Calkin
Special Projects Director
Tuscarora Intermediate Unit 11

Robert Cormany
Coordinator of Pupil Services
West Shore School District

Doris Creswell
Mathematics Education Adviser
Department of Education

William Fitzpatrick
Assistant Superintendent for Instruction
Radnor Township School District

John Hines
Director of Curriculum
Central Dauphin School District

Paul Hite
Principal
Elementary Schools East
Clearfield Area School District

Nancy Jones
Consultant
PCMP/PRIMES CSIU 16

Anthony Labriola
Curriculum Specialist
Tuscarora Intermediate Unit 11

Faye Lewis
Mathematics Supervisor, K-12
Marple Newtown School District

Francis McCaffrey
Superintendent
Tulpehocken Area School District

Helen McLain, Chief
Division of Quality Goals and Instruction
Department of Education

Renato Mazzei
Supervisor of Mathematics
Scranton School District

Nathaniel Plafker
Curriculum Consultant
Marple Newtown School District

Timothy Scott
Principal
New Bloomfield-Centre
West Perry School District

Miles Smith
Chairman, Mathematics Department
Clearfield Area School District

Ronald Szabo
Director of Curriculum and
Supervision
Bethlehem Area School District

John Zitto
Program Specialist
Capital Area Intermediate Unit 15

This document was produced under basic skills contract #1-25-330-004, PCMP/PRIMES, Central Susquehanna Intermediate Unit 16, Lewisburg, Pennsylvania.

CONTENTS

Introduction 1

Section I: Need for Mathematics Curriculum 5

Section II: Needs Assessment 7

. Goals, Objectives, Curriculum. 9
. Professional Growth - Administrator Form . 13
. Professional Growth - Teacher Form 15
. Learning Experience - Administrator Form . 17
. Learning Experience - Teacher Form 19
. Evaluation - Administrator Form. 21
. Evaluation - Teacher Form. 23

Section III: Proposal/Action Planning. 25

Section IV: Action Plan Implementation. 27

. Goals, Objectives, Curriculum. 27
. Professional Growth. 33
. Learning Experience. 35
. Evaluation 37

Appendices:

. A - Sample Documents A-1
. B - Forms. B-1
. C - References C-1

INTRODUCTION

Purpose:

As administrator for the mathematics program in your district, you are responsible for program quality. Changing existing practices in curriculum, in-service, instructional materials and evaluation requires careful planning, discussion, study, and action. Common to most successful program changes are:

1. defining and documenting need,
2. suggesting practical and timely procedures to meet need,
3. designing plan to implement suggested procedures,
4. outlining realistic budget to support recommended changes, and
5. sharing acceptable changes.

This Handbook is designed to provide a workable set of procedures for experienced administrators. If followed judiciously, steps outlined should result in general acceptance of suggested changes. You should be able to adopt or adapt recommended procedures to local need thereby instituting a program that reflects ever-changing student needs in learning mathematics.

Instructions:

The Handbook layout facilitates monitoring its use. The administrator assigns the person or agency responsible for each activity in each section. The assignment will vary according to a district's staffing resources. The column, "Date," is for the projected completion date. An "X" can be marked in the column, "Completed," after the activity is completed.

The handbook can be used at a building or district level.

Criteria for Contents and Forms

1. Practical
2. Well-defined
3. Systematic
4. Cost efficient
5. End product known in advance
6. Understood by lay board
7. Permit communication among buildings within district and among districts with similar interests

8. Paperwork prepared in advance and easy to complete

9. Manageable by local district staff

10. Practical for budgeting

11. Consistant with Twelve Goals of Quality Education; Curriculum Regulations, Chapter 5; Educational Quality Assessment (EQA); Long Range Plan for School Improvement (LRPSI) and the Department's Instruction Mission.

Relation to PCMP: The Pennsylvania Comprehensive Mathematics Plan: Direction for the 80s is the state plan for Department of Education mathematics programs. It provides a classification scheme and rationale for an effective mathematics program. It contains information on goals, objectives, curriculum, teacher professional growth, learning experience and evaluation. This Handbook outlines a process for putting PCMP into action.

Relation to LRPSI: For districts who have identified the mathematics goal as a priority, this Handbook can be used at Step 2a - Needs Assessment; Step 3 - Action Planning and Step 4 - Implementation. See page 7, LRPSI: Overview.

Relation to Instruction: In each phase of PCMP implementation: need; needs assessment; proposal/action planning and action plan implementation; administrators and teachers should be aware of the research findings for effective schools.

1. The SCHOOL MISSION, understood by students, teachers, administrators and the community, is a COMMITMENT to learning.

2. Strong INSTRUCTIONAL LEADERSHIP is present.

3. Teachers maintain continuous PROFESSIONAL GROWTH.

4. All students are EXPECTED TO LEARN.

5. The school ensures a positive LEARNING ENVIRONMENT.

6. The school MONITORS STUDENT PROGRESS within a carefully planned and articulated program.

7. Students, staff, and community COOPERATE and take responsibility for their respective roles.

8. School TIME is used for planning, instructing and learning.[1]

Benefits:

1. Major responsibilities of the mathematics administrator in relation to the Pennsylvania Comprehensive Mathematics Plan (PCMP) can be focused for efficiency of job performance.

[1] PDE. Approaching the Research on Effective Schools and Effective Classrooms. 1982.

2. The Handbook provides a degree of standardization and planning framework to encourage districts to communicate ideas and share successful projects.

3. The district mathematics program will be in compliance with Chapter 5, "Curriculum Requirements," Regulations of the State Board of Education of Pennsylvania and can be related to the Department of Education Long Range Plan for School Improvement (LRPSI) and Educational Quality Assessment (EQA).

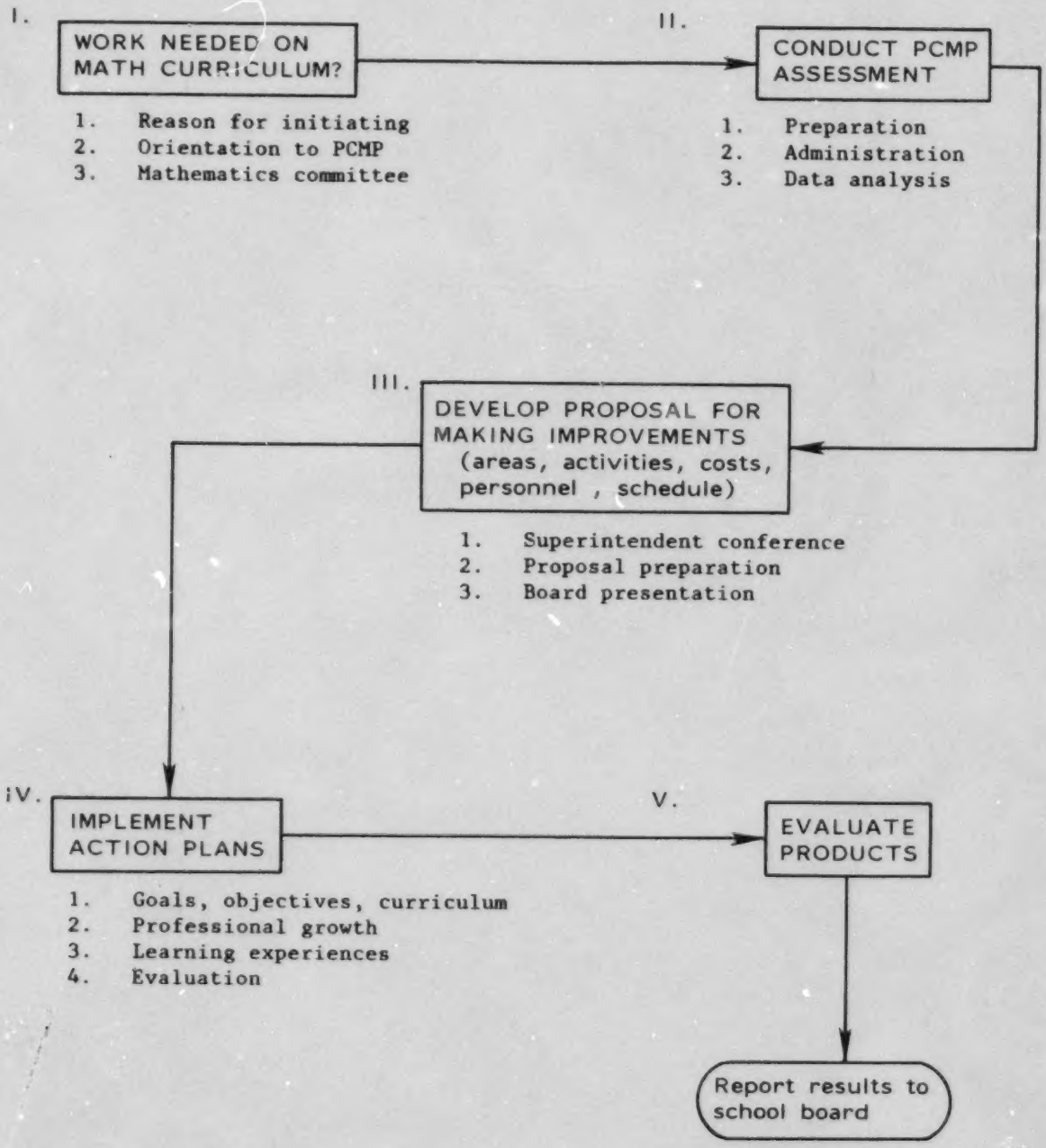
4. There should be an increase in effective and efficient use of district resources.

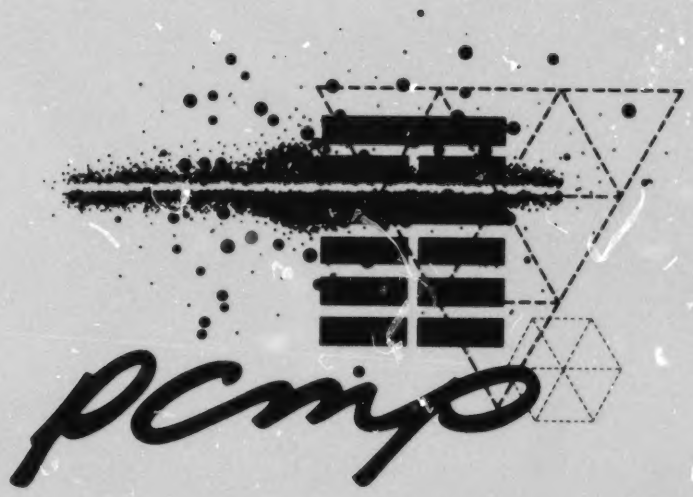
5. Articulation and coordination should be strengthened by systematic planning.

6. Realistic mathematics program priorities can be set by following a comprehensive plan that reflects suggestions of district staff.

7. Professionalism should increase at every level of instruction.

Summary of Process:

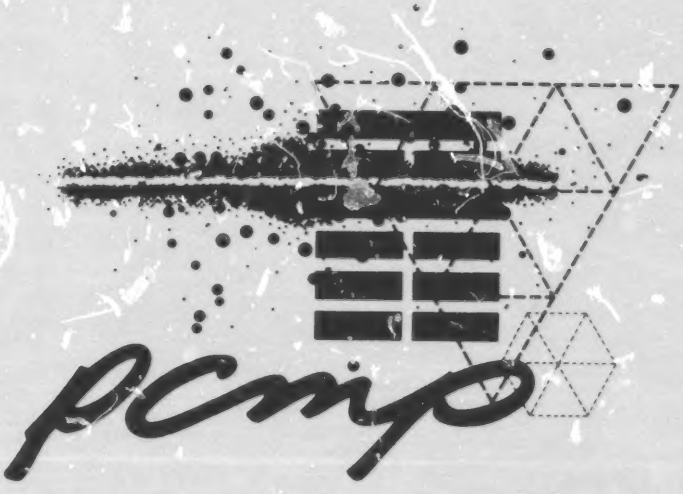




Section I:

Need for Mathematics Curriculum

ACTIVITY	PERSON/AGENCY	DATE	COMPLETED
1. REASON FOR CURRICULUM IMPROVEMENT 1.1 Specify reason(s) for initiating mathematics improvement program. Source: evaluation data _____; central administration _____; state requirement: regulations _____, LRPSI _____, EQA _____; federal requirement _____, other (specify) _____. 1.2 Write brief explanation on separate page.			
2. PCMP ORIENTATION 2.1 Secure presentation notes and set of transparencies for PCMP main ideas; Department of Education, (717) 783-3956 or Central Susquehanna Intermediate Unit 16, (717) 523-1155. (See Appendix B transparency masters [thermal]). 2.2 Plan PCMP orientation: (a) teachers; (b) administrators; (c) school board; (d) community; (e) others.			
3. MATHEMATICS COMMITTEE 3.1 Appoint committee. Assign administrator to serve as liaison to district administration and school board. Selection Criteria: grade levels, buildings, special programs, support services, administration. Responsibilities . Conduct needs assessment. . Establish priorities. . Prepare proposal for board approval . Develop plan of action. . Implement plan of action. . Plan/conduct dissemination. . Plan/conduct evaluation. Procedures . Schedule regular meetings. . Write report of proceedings. . Maintain activities file.			



Section II:

Needs Assessment

ACTIVITY	PERSON/AGENCY	DATE	COMPLETED
1. PREPARATION			
1.1 Assign staff responsibility.			
1.2 Determine number and type of recipients (administrators, teachers, etc.) Note recommended distribution on each form.			
1.3 Duplicate needs assessment questionnaires.			
1.4 Prepare cover memorandum stating the task, date due, name/location to be returned to, anonymity of recipients, advisibility of retaining file copies, etc.			
1.5 Orient administrative staff (principals, coordinators, etc.)			
1.6 Train clerical staff to log receipts and follow-up delinquents.			
2. ADMINISTRATION			
2.1 Distribute cover memorandum and questionnaires to participating administrative staff.			
2.2 Collect; log; follow-up.			
3. DATA ANALYSIS			
3.1 Tabulate (or computer process) for each type questionnaire (4) number responding to 0, 1, 2 ...; calculate weighted average. Use blank questionnaire forms.			
3.2 Identify needs based on empirical data.			
3.3 Present oral report at administrative staff meeting; e.g. curriculum council or community advisory committee. Solicit ideas about priorities and practical activities to address them.			
3.4 Present oral report to the mathematics committee.			

SECTION II: NEEDS ASSESSMENT - continued

ACTIVITY	PERSON/AGENCY	DATE	COMPLETED
3.5 Prepare needs report written with supportive data and recommendations from administrative staff and mathematics committee meetings (3.3; 3.4).			

SECTION II: Needs Assessment

GOALS, OBJECTIVES, CURRICULUM

Instructions: Mark numeral from 0 to 5 to describe how well each statement fits your district (building). Use 0 as no, never or none; and 5 as extremely well, very frequently, or always. Mark NA - not applicable if no information is available for your rating.

Recommended distribution: Administrators and selected teachers (number and grade levels dependent on size of district).

Statement	Scale (Low 0 1 2 3 4 5 High)						
	0	1	2	3	4	5	NA
GOALS (Example: Mathematics program is designed to develop understanding of how mathematics can be used to explain natural phenomena.)							
1. District has developed set of goals during past five years.							
2. Goals have been reviewed and revised during past five years.							
3. Goals represent points of view: committee, administrative and teaching staffs and community.							
4. Goals have been distributed to teachers, administrators and adequately explained.							
5. Goal statements are understandable to administrators, teachers and the community.							
6. Goal statements include a school mission of commitment to learning mathematics and maintenance of a positive attitude toward mathematics.							
7. Goal statements include high expectations that all students can learn mathematics.							

Statement	Scale Low 0	1	2	3	4	5 High	NA
OBJECTIVES (content and instructional purposes that are more specific than goals; may be broad; as Bloom five levels of cognition, or specific, as content and performance statements in PRIMES.)							
6. Objectives have been developed during past five years.							
7. Objectives have been reviewed and revised during past five years.							
8. Objectives represent points of view: committee, administrative and teaching staffs.							
9. Objectives have been distributed and adequately explained to teachers and administrators.							
10. Objective statements are understandable to administrators, teachers and community.							
CURRICULUM (written series of planned programs, including planned [illegible]s and program requirements for Goal II Mat[illegible] Curriculum Requirements - Chapter 5; PDE).							
11. Curriculum was developed by representative committee of teachers, administrators and support staff.							
12. Curriculum was revised during past five years.							
13. Teachers are expected to incorporate appropriate parts of curriculum in lesson planning, purchasing of materials, and instruction.							
14. Supervisor routinely refers to guide as basis for "keeping track" of instructional activities.							
15. There is a direct link between curriculum, testing, evaluation and parental reporting.							
16. Curriculum provides varied content, methods and materials to accommodate individual differences.							

Statement	Scale (Low 0 1 2 3 4 5 High)						
	0	1	2	3	4	5	NA
17. Curriculum is based on goals that address (a) mathematical competence, (b) understandings, (c) attitudes and (d) appreciation.							
18. Balance is maintained among three major program emphases: computation, concepts and applications.							
19. There is systematic monitoring and appraisal of successes and problems associated with curriculum implementation for next guide revision.							

20. Comment on any aspect of goals, objectives or curriculum not included in statement responses.

SECTION II: Needs Assessment

PROFESSIONAL GROWTH -Administrator Form

Instructions: Mark numeral 0 to 5 to describe how well each statements fits your district (building). Use 0 as no, never or none; and 5 as extremely well, very frequently, or always. Mark NA - not applicable if no information is available for your rating.

Recommended distribution: Principals

Statement	Scale Low 0	1	2	3	4	High 5	NA
PROFESSIONAL GROWTH (refers mainly to planned programs to improve administrator competence through graduate courses, IU courses or workshops, district workshops)							
1. District has written plan to describe professional growth program. Check types of in-service options in plan: college/university courses ____, IU courses ____, IU workshops ____, district workshops ____, district day programs ____, informal ____, internships ____, other (specify) _____ _____ _____.							
2. Principals are involved in planning mathematics in-service programs.							
3. Principals are involved in conducting mathematics in-service programs.							
4. Regular feedback is collected from principals to determine professional development needs.							
5. Regular feedback is collected from principals to evaluate the success of the mathematics in-service programs.							
6. Principals are involved in determining nature and content of participation in mathematics in-service program.							

	Statement	Scale (Low 0 1 2 3 4 5 High)	NA
7.	Principals are trained in implementation of curriculum guide.		
8.	Principals are trained in techniques of instructional program management.		
9.	Principals are trained in selection and use of instructional materials.		
10.	Principals are trained in methods of observing teachers teaching mathematics.		
11.	Professional journals and books are available for principals at each building or at central location.		

12. Check mathematics in-service topics offered or taken during past five years.

____ Guide implementation
____ Management techniques for regular program
____ Management techniques for special programs: gifted, accelerated, special education, etc.
____ Classroom management and grouping patterns
____ Motivational approaches and techniques
____ Diagnostic and evaluation techniques
____ Use of instructional media (not microcomputers)
____ Microcomputer literacy
____ Microcomputer programming
____ Other (list) _____

13. Comment on any aspect of administrator professional growth not included in statement responses.

SECTION II: Needs Assessment

PROFESSIONAL GROWTH - Teacher Form

Instructions: Mark numeral 0 to 5 to describe how well each statements fits your district (building). Use 0 as no, never or none; and 5 as extremely well, very frequently, or always. Mark NA - not applicable if no information is available for your rating.

Recommended distribution: Administrators and selected teachers (number and grade levels dependent on district size).

Statement	Scale Low 0	1	2	3	4	5 High	NA
TEACHER PROFESSIONAL GROWTH (refers mainly to planned programs to improve teacher competence through graduate courses, IU courses or workshops, district workshops, etc. of minimum of one day [6 hrs.]).							
1. District has written plan to describe professional growth program. Check types of in-service options in plan: college/university courses ____, IU courses ____, IU workshops ____, district workshops ____, district day programs ____, other (specify) _____							
2. Teachers are involved in planning mathematics in-service programs.							
3. Teachers are involved in conducting mathematics in-service programs.							
4. Regular feedback is collected from teachers to determine professional development needs.							
5. Regular feedback is collected from teachers to evaluate success of mathematics in-service programs.							
6. Teachers are involved in determining nature and content of participation in mathematics in-service program.							

Statement	Scale Low 0	1	2	3	4	5 High	NA
7. Professional journals and books are available for teachers at each building or at central location.							
8. Released time is provided for teachers to observe other teachers teaching mathematics within and/or outside district.							

9. Check mathematics in-service topics offered or taken during past five years.

____ Guide development
____ Use of manipulative materials
____ Alternative ways to present mathematics concepts
____ Classroom management techniques
____ Classroom grouping techniques
____ Motivational approaches and techniques
____ Diagnostic and evaluation techniques
____ Instructional media (not microcomputers)
____ Instructional prescriptions
____ Microcomputer literacy
____ Microcomputer programming
____ Other (list) _____

10. Comment on any aspect of teacher professional growth not included in statement responses.

SECTION: Needs Assessment

LEARNING EXPERIENCE - Administrator Form

Instructions: Mark numeral 0 to 5 to describe how well each statement fits your building. Use 0 as no, never or none, and 5 as extremely well, very frequently, or always. Use NA - not applicable if no information is available for your rating.

Recommended distribution: Administrators

Statement	Scale Low 0	1	2	3	4	High 5	NA
METHODS (systematic procedures of inquiry employed by particular discipline)							
1. Skills maintenance is continuing part of mathematics programs.							
2. Instruction proceeds from concrete experiences to more abstract representations.							
MATERIALS (subject matter information sources)							
3. Learning materials are selected based on instructional objectives stated in curriculum document.							
4. There is evaluation process for instructional materials.							
5. Students are provided with variety of materials in addition to textbook: concrete materials, multi-media aids, field trips, projects, computing devices.							
6. Teachers are given help in use of instructional materials.							
7. Teachers are provided information about the instructional materials available for use by groups or by individual students.							
8. Computer experiences are available at elementary level.							
9. Computer experiences are available at secondary level.							

Statement	Scale Low 0	1	2	3	4	High 5	NA
MANAGEMENT (all non-instructional responsibilities; e.g. planning, grouping, evaluating, etc.)							
10. Teachers are provided adequate time for instruction with minimal interruptions.							
11. Teachers are provided adequate planning time.							
12. Information is maintained about objectives taught and learning materials used.							
13. Records are kept for each student: work completed and test scores.							
14. Curriculum objectives are changed to make them appropriate for class or individuals.							
15. Instruction for students or groups of students is based on student diagnostic information related to curriculum objectives.							
16. Instructional facilities in addition to classrooms are provided: math labs, libraries, multi-media centers and computer rooms/labs.							

17. Comment on any aspect of learning experience not included in statement responses.

SECTION II: Needs Assessment

LEARNING EXPERIENCE - Teacher Form

Instructions: Mark numeral 0 to 5 to describe how well each statement fits your classroom. Use 0 as no, never or none, and 5 as extremely well, very frequently, or always. Use NA - not applicable if no information is available for your rating.

Recommended distribution: Teachers

Statement	Scale Low 0	1	2	3	4	High 5	NA
METHODS (systematic procedures of inquiry employed by particular discipline)							
1. Instruction provides for student interaction; discussions, projects.							
2. Instruction is paced according to student abilities.							
3. Uniqueness of each teacher is recognized by encouraging his/her own instructional style.							
4. Didactic (direct presentation) instruction is used.							
5. Developmental activities for readiness or exploration of ideas prior to practice for mastery are provided.							
6. Discovery experiences are provided.							
7. Learning experiences are balanced among concept development, computational skills and applications/problem-solving.							
8. Concentrated and spaced drill and practice provide for skill mastery.							
9. Skills maintenance is continuing part of mathematics program.							
10. Instruction proceeds from concrete experiences to more abstract representations.							
11. Readiness experiences are provided at all levels of instruction.							

Statement	Scale Low 0	1	2	3	4	High 5	NA
MATERIALS (subject matter information sources)							
12. Learning materials are selected based on instructional objectives stated in curriculum document.							
13. Students are provided with variety of materials in addition to textbook: concrete materials, multi-media aids, field trips, projects, computing devices.							
MANAGEMENT (all non-instructional responsibilities; e.g. planning, grouping, evaluating, etc.)							
14. At least 80% of the allocated time for instruction is for learning activities (time on task).							
15. Records are kept for each student: work completed and test scores.							
16. Curriculum objectives are appropriate for class or individuals.							
17. Instruction for students or groups of students is based on student diagnostic information related to curriculum objectives.							
18. Students are grouped for instruction according to individual needs based on achievement information.							
19. Instruction and administrative practices support research that time on task is most important factor associated with student achievement.							
20. Instructional space is provided for: (a) demonstration-discussion (large group); (b) partner-small groups and (c) independent study.							

21. Comment on any aspect of learning experience not included in statement responses.

SECTION II: Needs Assessment

EVALUATION - Administrator Form

Instruction: Mark numeral from 0 to 5 to describe how well each statement fits your district (building). Use 0 as no, never or none, 5 as extremely well, very frequently, or always. Use NA - not applicable if no information is available for your rating.

Recommended distribution: Administrators

Statement	Scale Low 0	1	2	3	4	High 5	NA
EVALUATION (measures used to determine goals and/or objectives attainment)							
Formal Measures: Standardized Tests							
1. District administers standardized test to assess student achievement -- yearly ___ grades ___; every two years ___ grades ___; other (specify) _____ grades ___							
2. Standardized tests are reviewed periodically to determine correlation between test objectives and curriculum objectives. Results are discussed with principals.							
3. Standardized test scores are readily accessible to teachers.							
4. Standardized test scores are used to develop and implement remedial and enrichment programs.							
5. Standardized test scores are used to compare achievement at various grade levels with national norms.							
6. Standardized tests are used to select textbooks or supplementary materials.							
Curriculum-Related Tests							
7. District uses commercial criterion-referenced tests (CRT's) in testing program.							
8. District uses CRT's to modify curriculum.							

EVALUATION - Administrators Form - Continued

Statement	Scale (Low 0 1 2 3 4 5 High)						
	0	1	2	3	4	5	NA
9. CRT's are used to develop and implement remedial and enrichment programs.							
10. CRT's are reviewed every five years to determine correlation between test objectives and curriculum objectives.							

11. Comment on any aspect of evaluation not included in statement responses.

SECTION II: Needs Assessment

EVALUATION - Teacher Form

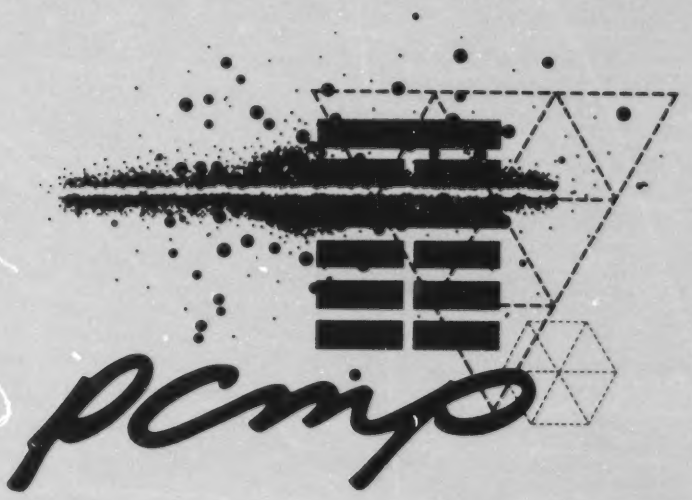
Instruction: Mark numeral from 0 to 5 to describe how well each statement fits your district (building). Use 0 as no, never or none, 5 as extremely well, very frequently, or always. Use NA - not applicable if no information is available for your rating.

Recommended distribution: Teachers

Statement	Scale (Low 0 1 2 3 4 5 High)	NA
EVALUATION: (measures used to determine goals and/or objectives attainment)		
Formal Measures: Standardized Tests		
1. Standardized test scores are used for grouping students according to skill and concept development needs.		
2. Standardized tests are used to select textbooks or supplementary materials.		
Curriculum-Related Tests		
3. Criterion - Referenced Tests (CRT's) are constructed by teachers.		
4. CRT's are used to group students.		
5. CRT's are used to modify curriculum.		
6. CRT's are reviewed every five years to determine correlation between test objectives and curriculum objectives.		
7. CRT's are used to develop and implement remedial and enrichment programs.		
Diagnostic Tests		
8. Diagnostic tests are used to assess student achievement level.		
9. Diagnostic tests are used to develop prescriptions for remediating student learning problems.		
10. Diagnostic tests are used to select supplementary materials.		

Statement	Scale Low 0	1	2	3	4	High 5	NA
Informal Measures: Interviews							
11. Interviews are used to determine student understandings of processes used in problem solving.							
12. Interviews are used to determine student attitudes toward mathematics.							
13. Interviews are used to determine student learning styles.							
Observations							
14. Observations are used to determine students attitudes toward mathematics.							
15. Observations are used to determine students learning styles.							
Self-Evaluation							
16. Student self-evaluation procedures are used to set objectives and to determine progress.							

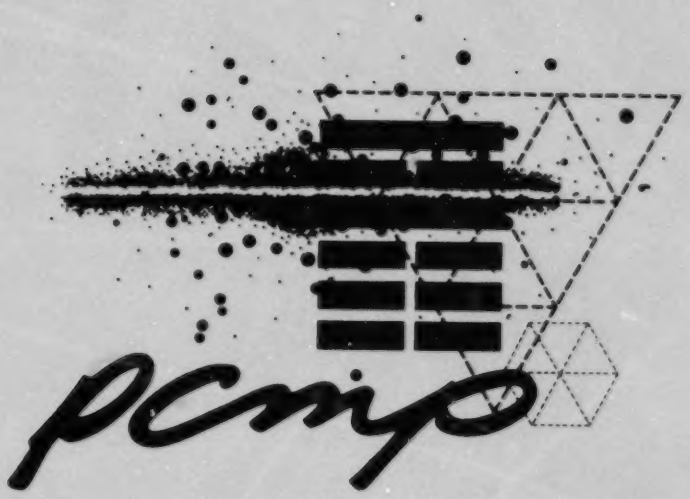
17. Comment on any aspect of evaluation not included in statement responses.



Section III:

Proposal/Action Planning

ACTIVITY	PERSON/AGENCY	DATE	COMPLETED
1. MEETING WITH SUPERINTENDENT 1.1 Present needs assessment data and report. 1.2 Discuss, modify and develop proposal ideas: product, activities, personnel, time, budget, etc. 1.3 Assign responsibility for preparing proposal.			
2. PREPARE PROPOSAL (See Appendix C, Action Planning Components, LRPSI) 2.1 Determine categories: (a) program/problem, (b) supportive data, (c) description (scope), (d) staff (professional and support), (e) time schedule (dates and estimated hours), (f) benefits to district, staff, students, (g) constraints (e.g. scheduling costs, space problems, teacher contracts, etc.), (h) evaluation and (i) budget (see Appendix B for form). 2.2 Write proposal (See Appendix A for sample). 2.3 Review and revise. 2.4 Prepare materials for board presentation: visuals; handouts, including abstract of action plan. 2.5 Prepare presentation: review materials (2.4) and highlight information to be presented.			
3. BOARD PRESENTATION 3.1 Present proposal to Board committee (e.g. Education, Curriculum) 3.2 Present proposal to Board. 3.3 Request Board approval of proposal. 3.4 Report Board action to administrative staff; distribute copies of approved proposal.			



Section IV:

Action Plan Implementation

SECTION IV: ACTION PLAN IMPLEMENTATION -- Goals, Objectives, Curriculum

Rationale:

Written curriculum based on specified goals and objectives reduces amount of variance in mathematical content and instructional time. Curriculum should assure: (1) balanced instructional program in understanding concepts, computational skills and application/problem-solving and (2) flexible program for needs, interests and abilities of all students.

As defined by proposed Chapter 5, "Curriculum Requirements", Regulations of the State Board of Education of Pennsylvania, curriculum is written series of planned programs of instruction consisting of: (1) written statement of objectives to be achieved by students; (2) content and instructional time needed to reach objectives; (3) expected levels of achievement; and (4) procedures for evaluation. This document is required by the Pennsylvania Department of Education in the Long Range Plan for School Improvement (LRPSI).

ACTIVITY	PERSON/AGENCY	DATE	COMPLETED
1. GOALS			
1.1 Study mathematics goals from school districts, state education agencies, state and national professional organizations (See Appendix C). . Study general district philosophy (LRPSI) . Consider present and future student needs . Review State Board Curriculum Requirements for Goal II: Mathematics (Regulations 5.4) . Discuss research studies in Appendix A, PCMP.			
1.2 Write set of mathematics goals. Consider separate subsets for K-6 (K-5), 7-9 (6-8), 10-12 (9-12).			
1.3 Circulate drafts and request reactions from all elementary teachers and secondary mathematics teachers.			
1.4 Present goals to school board for reactions and additions which reflect community point of view.			
1.5 Produce copies for distribution.			

SECTION IV: ACTION PLAN IMPLEMENTATION -- Goals, Objectives, Curriculum - Continued

ACTIVITY	PERSON/AGENCY	DATE	COMPLETED
1.6 Distribute to all elementary and secondary mathematics teachers. 1.7 Print goals in district newsletter. Request reactions from students, parents and community leaders.			
2. OBJECTIVES - CONTENT 2.1 Secure comprehensive lists of mathematics topics (content and skill statements) to serve as resource document for committee decisions (See Appendix C). 2.2 Identify grade levels where concepts and skills are presently taught. 2.3 Develop guidelines for deciding where concepts and skills should be taught. 2.4 Decide where concepts and skills should be taught. 2.5 For each concept and skill assigned to each grade level decide: 2.5.1 degree of importance: (1) essential for all students; (2) important to teach, mastery not required of all students; (3) enrichment for the able students; and (4) optional - to be taught if time is available. 2.5.2 instructional responsibility: (1) introduce, (2) develop, (3) master and (4) review. 2.5.3 approximate time of year to be taught. 2.6 Combine related concepts in broad categories. This document is district scope and sequence chart.			

SECTION IV: ACTION PLAN IMPLEMENTATION -- Goals, Objectives, Curriculum - Continued

ACTIVITY	PERSON/AGENCY	DATE	COMPLETED
2.7 Distribute the typed draft for teacher reaction. Attach memorandum outlining specifically what is expected from each respondent; indicate due date for responses.			
2.8 Review responses and revise scope chart.			
2.9 Type and distribute to elementary and secondary mathematics teachers.			
2.10 File report documenting the committee work: membership and positions; schedule: dates and time of meetings; minutes (decisions); resources (consultants, materials, etc.).			
2.11 Conduct in-service sessions.			
3. CURRICULUM GUIDE			
3.1 Study various guide models (See Appendix C).			
3.2 Develop page format for defining these elements for each concept and skill to be taught.*			
3.2.1 Statement and code for ready reference.			
3.2.2 Importance: 1, 2, 3, 4 (See Objectives 2.4.1)			
3.2.3 Instructional responsibility: introduce, develop, master, review (See Objectives 2.4.2)			
3.2.4 Approximate time of year (See Objectives 2.4.3).			

*Separate Planned Courses (secondary: grades 7-12)
- Course title
- Course description (catalog)
- Objectives
- Content: topical outline
- Instructional activities
- Evaluation (representative methods)
- Resources: print; nonprint; equipment; human, etc.

SECTION IV: ACTION PLAN IMPLEMENTATION -- Goals, Objectives, Curriculum - Continued

	ACTIVITY	PERSON/AGENCY	DATE	COMPLETED
3.2.5	Student outcomes, usually stated as behavioral objectives or performance objectives.			
3.2.6	Examples of assessment items or tasks.			
3.2.7	References to instructional materials - textbooks and supplementals.			
3.3	Complete entries for each concept and skill.			
3.4	Write introductory sections which may include: (1) table of contents, (2) acknowledgements, (3) description of process and timeline for developing guide, (4) description of contents, (5) purposes, (6) goals, (7) scope chart, etc.			
3.5	Proofread for consistency of language, style and format.			
3.6	Prepare for distribution.			
3.7	Package in quality binders (guide should be of high professional quality).			

SECTION IV: ACTION PLAN IMPLEMENTATION -- Goals, Objectives, Curriculum - Continued

ACTIVITY	PERSON/AGENCY	DATE	COMPLETED
4. CURRICULUM GUIDE IMPLEMENTATION			
4.1 Distribute guide to teachers.			
4.2 Conduct orientation in-service for teachers to explain development and use of guide.			
4.3 Conduct orientation in-service for principals to explain guide development and use.			
4.4 Present guide to school board. Report should include staff responsible, timeline of committee meetings, guide production, budget summary and proposed uses.			
4.5 Design procedures for principals to use guide in supervision: weekly lesson plans; observations; textbook evaluation; use of supplementals and evaluation.			
4.6 Design evaluation system for individual teacher involvement in guide use and revision: feedback form; frequency of collection (2 or 3 time/year); analysis of feedback data, summarize, recommendations by committee and schedule time for committee to work on guide revision.			
4.7 Field test supervisory procedures (4.5).			
4.8 Implement evaluation system (4.6).			
4.9 Present plan and budget to school board for revising guide.			
4.10 Revise guide after experimental period.			
4.11 Distribute revised guide to teachers and administrators, conduct in-service session.			
4.12 Implement revised guide through supervisory and evaluation procedures (4.5, 4.6).			
4.13 Review and distribute revised pages. Conduct in-service session.			

SECTION IV: ACTION PLAN IMPLEMENTATION – Professional Growth

Rationale:

Mathematics programs improve as teachers develop and maintain their competencies in curriculum, instruction and evaluation. Any change in one of these areas implies need for teacher in-service. Successful in-service is based on teacher involvement in: (1) determining needs; (2) sharing expertise and (3) suggesting types and amount of participation.

ACTIVITY	PERSON/AGENCY	DATE	COMPLETED
1. Develop district policy for in-service education: (a) types; (b) frequency; (c) scheduling; (d) staffing.			
2. Collect information to determine: (a) needs; content, methods, materials, management, motivation, evaluation, etc.; (b) types: independent study, sharing with and by teachers, school system provisions, IU provisions, college or university courses, etc.; (c) schedule: dates and time; (d) instructors; etc.			
2.1 Discuss with principals, areas and types of needed staff in-service.			
2.2 Review results of testing program to identify strengths and weaknesses. Review EQA reports.			
3. Analyze information to determine reliability and areas for which in-service is required. List in priority order.			
4. Develop multi-year plan for in-service education with costs and funding sources. Coordinate with intermediate unit (IU) and institution of higher education (IHE) continuing education or degree programs.			
5. Design in-service program for first year: courses, dates/time,location, instructors.			
6. Distribute in-service schedule.			

SECTION IV: ACTION PLAN IMPLEMENTATION - Professional Growth - Continued

ACTIVITY	PERSON/AGENCY	DATE	COMPLETED
7. Conduct courses, workshops, etc.			
8. Assess each course and workshop; request form from each participant. Collect information on: (a) instructor, (b) content, (c) methodology, (d) classroom applications, etc.			
9. Revise plan yearly based on assessment data.			

SECTION IV: ACTION PLAN IMPLEMENTATION -- Learning Experience

Teacher Strategies; Teaching Environment and Instructional Materials

Rationale:

PCMP describes learning experiences that can provide for optimal student growth in mathematics achievement and attitude. Teacher strategies, teaching environment and instructional materials can be changed to contribute to student growth.

Instructional resources -- curriculum guides, materials/media, methods, teaching styles, setting, time, organizational patterns, etc. -- must accommodate individual student differences. Appropriate instruction means varied learning experiences, focus on student learning and concern for human values. Learning sequence for mathematics is: (1) readiness (prerequisites mastered); (2) intro-duction; (3) concept development; (4) practice and (5) maintenance for application and transfer. Instructional methods vary for purpose, organization and student needs.

ACTIVITY	PERSON/AGENCY	DATE	COMPLETED
1. STRATEGIES AND ENVIRONMENT			
1.1 Review needs assessment report for Learning Experience; identify areas of deficiency.			
1.2 Set up task forces of from 2-8 teachers who volunteer to work on identified areas.			
1.2.1 Inform teachers.			
1.2.2 Decide time and frequency of meetings.			
1.2.3 Plan activities for teachers who do not volunteer for improvement effort.			
1.3 Develop self-improvement plan.			
1.3.1 Choose leader and recorder (teachers).			
1.3.2 Specify information sources: research studies; consultants; on-site visits; audio-visual lectures; etc.			
1.3.3 List specific activities to accomplish individual teacher objectives.			
1.3.4 Set up meeting schedule.			
1.4 Carry out plan (1.3).			

SECTION IV: ACTION PLAN IMPLEMENTATION -- Learning Experience - Continued

ACTIVITY	PERSON/AGENCY	DATE	COMPLETED
1.5 Conduct seminar to share findings from 1.3.3.			
1.6 Conduct seminar to share findings among task forces.			
1.7 Invite supervisor to observe several classroom sessions to see objectives accomplished (1.3.3).			
1.8 Suggest writing accomplishment for school newsletter, professional journals (PCSM Newsletter, PCTM Newsletter, PCTM Journal, The Arithmetic Teacher, The Mathematics Teacher).			
2. MATERIALS			
2.1 Review instructional materials listed in guide to determine whether they are appropriate and sufficient for concepts and type (concrete, pictorial and abstract).			
2.2 Develop purchase plan; priority order and costs; include microcomputers and calculating devices.			
2.3 Secure administrative approval of plan.			
2.4 Develop management plan: (a) how and when to use (classroom demonstrations); (b) form to evaluate type and amount of use; (c) labeling and storage (classroom, control); (d) reserve and sign-out procedures and forms; (e) maintenance (replacement) responsibilities, etc.			
2.5 Develop plan for reviewing/recommending new materials.			

SECTION IV: ACTION PLAN IMPLEMENTATION -- Evaluation

Rationale:

Evaluation can be viewed as process for determining extent to which outcomes agree with goals or objectives of mathematics program. Are we achieving what we set out to achieve? Evaluation is accomplished by formal and informal measures using variety of assessment devices. Data are collected at national, state, regional, district, classroom and student levels.

Evaluation is essential component of comprehensive mathematics program. Data are used to set new goals for continuous program improvement.

ACTIVITY	PERSON/AGENCY	DATE	COMPLETED
1. Determine status of current evaluation program.			
.1 Design data evaluation form: (See Appendix B) . Types of procedures (standardized, curriculum-related (textbook, teacher-made), interviews, observations, etc.) . Selection process . Frequency of administration . Student populations . Data analysis and reports . Reports (data) - achievement, diagnosis, grouping, class assignment, (remedial, accelerated, ...), etc. . Filing reports . Accessibility of reports - teachers, parents, students, administrators.			
1.2 Distribute data form to selected, qualified staff members; e.g. guidance counselors, principals, etc.			
1.3 Analyze and summarize data.			
2. Review report and discuss strengths and weaknesses in district evaluation program. Suggest additions, deletions and modifications. Consider amount of testing, relationship to curriculum and uses.			

SECTION IV: ACTION PLAN IMPLEMENTATION -- Evaluation - Continued

ACTIVITY	PERSON/AGENCY	DATE	COMPLETED
3. Revise evaluation program correlated to curriculum, goals and objectives. Include all items in 1.1.			
4. Field test to determine effectiveness of revised evaluation program. Questions to be answered: (a) Is teacher provided with current, useful information? (b) Is administration provided with data necessary to revise curriculum, select instructional materials, conduct in-service, etc.?			
5. Revise evaluation program based on field test; implement districtwide.			
6. Conduct in-service to inform entire staff about program (See 5).			

Appendix A:

Sample Documents

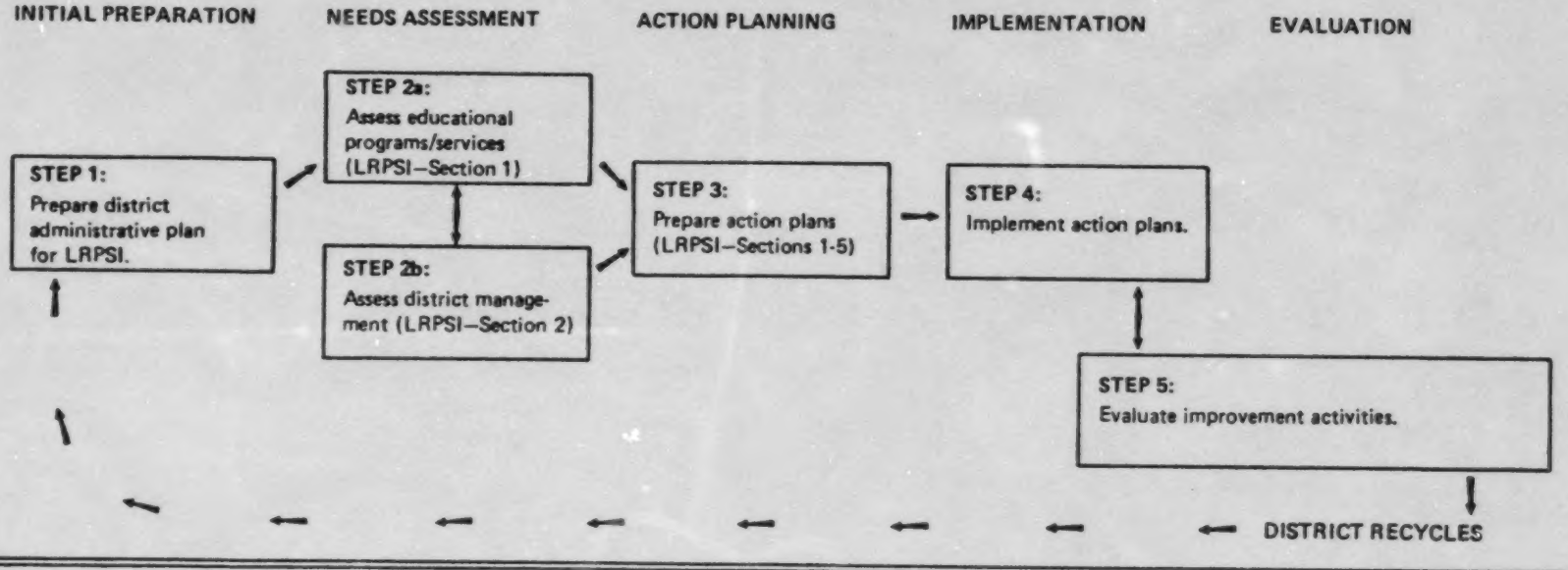
SAMPLE DOCUMENTS

1.	"Action Planning"; Long-Range Planning for School Improvement, Guidelines and Instruction. PDE, 1981.	Section III 2
2.	"Proposal to Utilize PRIMES Services" and page from Board Minutes; Parkland School District.	Section III 2.2 and 3.3
3.	"General Procedures for Curriculum Development"; Central Dauphin School District.	Section III 2.2
4.	"Curriculum Development Cycle"; Radnor School District.	Section I 3; Section III 2.2
5.	"Request to Conduct a Pilot Project"; West Shore School District.	Section III 2.2

L ONG
R ANGE
P LANNING FOR
S CHOOL
I MPROVEMENT

IS a comprehensive planning/improvement process whereby a district examines school operations in key areas, establishes priorities for improvements, and seeks out, implements, and evaluates solutions.

PROCESS STEPS AND REPORTING REQUIREMENTS


INITIAL PREPARATION
NEEDS ASSESSMENT
ACTION PLANNING
IMPLEMENTATION
EVALUATION
STEP 1: Prepare district administrative plan for LRPSI.
STEP 2a: Assess educational programs/services (LRPSI—Section 1)
STEP 2b: Assess district management (LRPSI—Section 2)
STEP 3: Prepare action plans (LRPSI—Sections 1-5)
STEP 4: Implement action plans.
STEP 5: Evaluate improvement activities.
DISTRICT RECYCLES

THE DISTRICT SUBMITS:

- ✓ A summary of the action plans and supporting documentation as required by the guidelines.

  RESULTING IN SCHOOL DISTRICT PRE-REGISTRATION
- ✓ A progress report summarizing the status of implementation of each action plan submitted in the original plan.
- ✓ Evaluation reports describing outcomes that resulted due to implementation of each action plan.

  RESULTING IN SCHOOL DISTRICT REGISTRATION

LRPSI: Overview, p. 7

LRPSI PROCESS GUIDE:
CHECKLIST OF STEPS AND BASIC TASKS

Step 1 Prepare and Implement a District Administrative Plan for LRPSI

_____ 1. Select staff to initiate LRPSI planning
_____ 2. Study LRPSI Overview, Process Guide, and Guidelines
_____ 3. Develop a district administrative plan
_____ 4. Initiate the implementation of the plan

Step 2a Analyze Building/District Programs and Services Strengths and Needs

_____ 1. Establish district goals for programs and services and analyze the relationship of the district's goals and planned courses to the Twelve Goals of Quality Education
_____ 2. Develop and implement a plan for assessing strengths and needs in the area of programs and services
_____ 3. Collect, analyze and summarize data on current student performance (growth) on the district's goals and data regarding staff and community perceptions of goal importance and level of attainment
_____ 4. Determine priorities for action planning at both the school and district levels

Step 2b Analyze Management Area Strengths and Needs

_____ 1. Establish district management goals
_____ 2. Develop a plan for assessing district management strengths and needs
_____ 3. Collect and summarize information regarding each management goal
_____ 4. Determine district management priorities for action planning

Step 3 Develop Action Plans for Priority Programs and Services and Management Goals

_____ 1. Clarify the problem context for each priority
_____ 2. Acquire and analyze information about existing practices, products and research which might help the school or district take effective action
_____ 3. Decide on courses of action to be taken to address school and district priorities
_____ 4. Prepare action plans for each school and district priority and obtain board approval

LRPSI: Process Guide, pp 28, 29

Step 4 Implement Building and District Action Plans

_____ 1. Initiate implementation activities
_____ 2. Initiate evaluation activities
_____ 3. Monitor implementation -- adjust as needed
_____ 4. Prepare and submit Progress Report

Step 5 Evaluate Improvement Activities, Report, and Recycle

_____ 1. Complete collection of evaluation data
_____ 2. Summarize and analyze evaluation data
_____ 3. Prepare evaluation reports for improvement efforts and submit to PDE for district Registration
_____ 4. Use evaluation information to assess and modify improvement activities for the next LRPSI cycle

Section III: A Proposal - _____

From: Long-Range Planning for School Improvement, Guidelines and Instructions, PDE, 1981, Page 4.

Action Planning

ITEM 6 - Develop building-level action plans** for each district-wide and building-specific priority goal. Action plans should include the following components:

A. Objectives of the plan in terms of student growth desired.
B. Indication of changes to be made. (Examples of areas in which changes can be made include but are not limited to school environment, instructional practice, resource allocations, supervision, staff development, district policies, administrative organization and procedures.)
C. The major activities to be undertaken to make the changes.
D. The schedule of major activities.
E. The position title of the person responsible for each activity.
F. Expected cost of each activity.
G. The evaluation questions to be asked and the evidence to be used to answer them.
H. The position title of the person responsible for the evaluation and the date for the completion of the evaluation.

** BUILDING LEVEL ACTION PLANS SHOULD BE ON FILE IN THE DISTRICT AND BUILDING OFFICES.

ITEM 7 - Prepare and submit to PDE for each district-wide priority goal a summary of individual building-level action plans which includes:

A. Objectives in terms of growth desired.
B. Changes to be made.
C. Major activities to be undertaken.
D. Schedule of major activities.
E. Position title of persons responsible.
F. Expected cost of each major activity.
G. Evaluation questions to be asked and the evaluation evidence to be used.
H. Position title of person responsible for district coordination of the LRPSI and projected dates for filing progress and evaluation reports.

TO: Carmen J. Riola

FROM: Curriculum Services, Mel Bollinger

SUBJECT: Proposal to Utilize PRIMES Services

PRIMES (Pennsylvania Retrieval of Information for Mathematics Education System) is a tool for educators to use in developing, implementing, and evaluating the mathematics curriculum. Essentially, PRIMES is a massive data base developed from analysis of curriculum materials, i.e., basal series, audiovisual materials, manipulative materials, and tests.

A mathematics curriculum committee can now have a comprehensive, item-by-item, concept-by-concept listing from which to build the precise curriculum it desires. The local district determines which concepts are to be taught and which instructional materials are to be used. The PRIMES data base is employed as a reference for district decision-making. A qualified PRIMES consultant is assigned to work with the district.

At the mathematics curriculum committee meeting of December 5, 1980, the committee unanimously determined to seek PRIMES assistance with:

...developing a scope and sequence which identifies the math concepts and skills to be taught, K-6 (K-8, if desired).

...instructional materials analysis which assists in the selection of resources that best "fit" the curriculum.

The benefits of contracting with PRIMES are:

1) most authoritative data base for mathematics education nationally.
2) capability to provide needed expertise for the mathematics curriculum development.
3) cost effective-data retrieval base to gather extensive/pertinent information more efficiently and economically than we could do it ourselves.
4) proven system and services-successful curriculum development model with over 250 school districts across the state.
5) the PRIMES system meets the requirements of the Pennsylvania Comprehensive Mathematics Plan (PCMP).

These phase-one PRIMES curriculum development activities, with 2-3 days of on-site consultant services, are available for a $1,200.00 contract with West Chester State College.

Budgeted monies are available for this contract.

AWARD OF BIDS - COOPERATIVE PURCHASING

It was agreed by motion of Mr. Baldrige, seconded by Mrs. Hess, to authorize the Board Secretary to award contracts for the purchase of general and duplicating supplies to the low bidders through the Lehigh County Cooperative Purchasing Board, if bids are lower than those received by the district. All voted in favor.

REGIONAL SUMMER SCHOOL OF THE ARTS APPROVED

By motion of Mr. Baldrige, seconded by Mr. Schantz, the sponsorship of twenty-three Parkland students in the Regional Summer School of the Arts was approved at a cost of $86.50 per student, for a total cost of $1,989.50. All voted in favor.

DRIVER EDUCATION CAR RENTAL

Mr. Baldrige moved, seconded by Mr. Schwarz, to approve a charge of $90.00 per month for the driver training car leased from Shoemaker's Motors. All voted in favor.

SPORTS PROGRAM DISCUSSED

Mr. Dale Zimmerman, high school assistant principal, reviewed the possibility of the need for an organizational realignment of the district's athletic program due to changes being made by other school districts.

CONTRACT WITH PRIMES FOR CURRICULUM DEVELOPMENT

It was moved by Mr. Baldrige, seconded by Mr. Katz, to enter into a contract with Dr. Emanuel Berger to coordinate the development and revision of the mathematics curriculum in the elementary grades through PRIMES (Pennsylvania Retrieval of Information for Mathematics Education System). Cost for the first phase of the project is $1,200.00. All voted in favor.

APPROVAL OF DATE FOR COMMENCEMENT

It was agreed by motion of Mr. Baldrige, seconded by Mr. Katz, to approve Wednesday, June 10, 1981, as the date for Parkland High School commencement. Commencement exercises will be held at Muhlenberg College's Memorial Hall. All voted in favor.

EMPLOYMENT OF ENERGY CONSULTANT

Mrs. Hess moved, seconded by Mr. Grim, to contract with the firm of John F. Stevens and Associates, Inc., to serve as energy management consultants in the development of a proposal for energy conservation at Parkland High School, at a cost not to exceed $4,000.00. A portion of the contract will consist of the completion of the application for federal funding for energy conservation management. All voted in favor.

EMPLOYMENT OF SERVICE PERSONNEL

Mr. Schantz moved, seconded by Mr. Schwarz, to employ the following individuals:

Mrs. Rosann Saeger, as a substitute cafeteria employe at the rate of $3.20 per hour, effective immediately

Mr. Leroy Snyder, as a hall monitor at Parkland High School at the rate of $3.20 per hour, effective January 6, 1981

Mr. Richard Gessner, as a part-time garage mechanic at the rate of $3.35 per hour, effective December 22, 1980

All voted in favor.

CENTRAL DAUPHIN SCHOOL DISTRICT

CURRICULUM DEVELOPMENT

A. General Procedures for Curriculum Development

1. All subject guides should be reviewed by committees and departments annually to determine:
   a. minor revisions needed
   b. major rewriting needed
   c. review the guide to verify that:
      1. content is current
      2. content is being taught at the appropriate level
      3. priorities are identified in the content so that teachers know what is critical for all levels of pupils.
      4. general percentage of time to be devoted to each area is clearly defined.

2. A decision to propose rewriting should be based on a clearly identified need. The number of years a guide has been in use should not be the sole reason for a revision. Ideally, if regular updating is done, the guide has no real date associated with it.

3. Once it becomes obvious that work is needed, a proposal is developed for review. (The Administrative Assistant for Curriculum Development is available to help in proposal development - call 270.) The proposal must contain:
   a. a brief statement establishing the need for the work and clearly defining the scope of the revision - i.e., the area and intended levels or groups of pupils.
   b. who will accomplish the work and when it will be done
   c. the estimated number of hours needed per person involved
   d. the number of hours of typist time needed to produce one clean, finished copy
   e. any constraints anticipated, such as, scheduling conflicts, space problems, increased staff needs, major text or materials purchases - especially expensive equipment. Any repetitive, annual costs should be identified.
   f. describe the effect of the proposed change on the K-12 curriculum. Involve appropriate chairmen in a review of the proposed change,
   g. the number of finished copies (including building principals) needed, by building.
   h. describe the plan to evaluate the guides or revisions at mid-term and at the end of the school year. These evaluations should be sent to the Administrative Assistant for Curriculum Development, Administration Building.

B. Important Items and Deadlines

1. If the work involves a major proposal for a new secondary subject to be added to the curriculum or a major change in a program, which will require a change in the course catalog or other materials given to pupils for scheduling, final Administrative Council clearance must be obtained no later than the October Council meeting.

2. For all curriculum work an estimated budget figure, by budget codes, must be given to the Administrative Assistant no later than January 14, 1982 (date may vary each year).

3. For any summer work, the names of staff involved and the finalized proposal are due three working days before the March Administrative Council meeting.

4. Minor revisions are to be accomplished at department or committee meetings during the year. In such cases, a final copy should be sent to the Administrative Assistant with instructions for distribution. The chairman should exercise judgment in these instances.

C. Major Proposal Timeline - Latest Possible Dates

(A memo will be provided with the dates for the current year)

March - April - Begin review of course guides for next year

May - Develop preliminary proposals for discussion

September - Review and Approval by:

1. committees or departments - involve chairmen above and below intended level

2. elementary and/or secondary principals

October - Review and approval by Administrative Council (for items affecting the catalog)

December - Final review and approval by Administrative Council (non-catalog changes)

January - Budget to Administrative Assistant for Curriculum Development

February - Names of staff involved to Administrative Assistant for Curriculum Development for School Board Approval.

March - Final clearance of summer work by Administrative Council

June - Budget approval process - notification that work will proceed

D. Minor Revision Timeline

The same clearance procedure, defined in C above, must be followed. However, the major element for concern is preparation of copies of minor revisions in time for teacher use as planned. This generally means that the Administrative Council deadline for minor revision planned for September is June of the current year. This does not hold true if budget is a consideration.

NOTE: No proposals will be accepted beyond deadlines without the Superintendent's permission.

RADNOR TOWNSHIP SCHOOL DISTRICT

Curriculum Development Cycle

Given the overall view of the current educational programs and services related to the Ten Goals of Quality Education and the need to incorporate established priorities, in part, by the Long Range Plan, a curriculum development cycle will be instituted to develop a scope and sequence guide for each subject matter area: this process promotes systematic planning, development, implementation and evaluation through the joint involvement of the K-12 curriculum committees and the Administrative Council under the direction of the Office of the Superintendent.

A. K-12 Curriculum Committees

1. Personnel: The first step of the Curriculum Development Cycle is the assignment of personnel. A typical K-12 committee for subject matter areas might be comprised as follows:

   Administrator and/or coordinator

   High School representatives
   Department chairperson and 2 staff members (grades 9-12)

   Middle School representatives
   Department chairperson and 2 staff members (grades 6-8)

   Elementary representatives
   2 Ithan teachers (primary and intermediate)
   2 Rosemont teacher
   2 Wayne teachers (primary and intermediate)

   Assistant Superintendent for Instruction (ex officio)

2. Appointment: After obtaining recommendations by administrators and staff members, the Superintendent will appoint the district-wide curriculum committees and their chairpersons. Building level groups may be appointed as required by the building principals.

3. Meetings: Monthly throughout the calendar year with release time, summer workshops and/or after-school meetings as required.

4. Purpose:

   (a) Determine which aspects of any field are in need of review based on staff recommendations and their own studies
   (b) Establish and delimit the objectives of a given study
   (c) Develop a critical path for completion of the work
   (d) Assist in planning for working committees
   (e) Serve as a central committee from the inception through to the culmination and evaluation of a total study.

5. Decision Making: Groups may use a voting system or arrive at conclusions through consensus. Decisions in either case are advisory to the administrators under whose jurisdiction the K-12 curriculum committees are functioning. All curriculum committees are responsible to the Assistant Superintendent for Instruction.

6. Minutes: A secretary shall be named by the K-12 curriculum committee to prepare minutes of each meeting. These documents should contain: time and place of meetings; members present and absent, a summmary of topics discussed; and a schedule of subsequent meetings. Minutes shall be submitted to the Office of Instruction for distribution to all committee members and the Administrative Council.

B. Administrative Council

1. Membership: Assistant Superintendent for Instruction, Assistant Superintendent for Personnel, Business Manager, Administrative Assistant to the Superintendent, Director of Special Projects, Director of Special Education and Psychological Services, Director of Guidance, Principals and Assistant Principals

   Members of the K-12 curriculum committees will be invited to participate in the Administrative Council as required.

2. Meetings: Monthly throughout the calendar year.

3. Purpose:

   (1) Advise Superintendent
   (2) Accept and review proposals for curriculum changes
   (3) Review curriculum trends and regulations (both local and state)

C. Implementation of Cycle

The following table summarizes the curriculum development cycle in terms of its phases, time lines, organizational units and functions.

PERIOD	ORGANIZATION	FUNCTIONS
FIRST PHASE Planning (Sept.-June) Year 1	K-12 Curriculum Committee for Preliminary Study of Respective Subject Areas	Preliminary Study. Review of Current Programs. General Review of Proposals. Establishing and Limiting the Objectives of the Study. Developing the Time Line and Plans for the Study. Establishing Working Committee(s). Consulting with Administrative Council.
SECOND PHASE Development (Summer)	Working Committees for Program Development	Formalizing Content and Other Objectives. Preparing Course Guides Where Needed. Review of Textbooks and Materials. Recommendations for Implementation, Including Materials, Pilot Program(s), and Budget. Reporting Progress to Administrative Council.
THIRD PHASE Implementation (Sept.-June) Year 2	Implementation in Schools Under School Principals and Subject Area Coordinator	Distribution of Newly Developed Guides and Materials. In-Service Programs and Follow-up. Ongoing Evaluation of Program. Review and Recycling. Communicate with Administrative Council.
EVALUATION (continuous throughout Phases I, II, and III)	K-12 Curriculum Committee Working Committees Administrative Council	Share Reactions of Teachers, Administrators, Parents, and Students (Attitude, interest, etc.). Survey through questionnaires. Assess Achievement with measurable outcomes (when possible). Develop Summary Report.

D. Assignment of Subject Area to Cycle

	School 76 - Year 77	Summer 77	School 77 - Year 78	Summer 78	School 78 - Year 79	Summer 79	School 79 - Year 80	Summer 80	School 80 - Year 81	Summer 81	School 81 - Year 82	Summer 82
Art					I	II	III					
Business							I	II	III			
English/ Language Arts					I	II	III					
Foreign Language					I	II	III					
Guidance	I		II	III								
Health					I	II	III					
Home Economics									I	II	III	
Humanities					I	II	III					
Industrial Arts									I	II	III	
Library			I	II	III							
Mathematics			I	II	III							
Music	I	II	III									
Physical Education					I	II	III					
Reading			I	II	III							
Science			I	II	III							
Social Studies							I	II	III			
Special Education							I	II	III			
TV/Drama									I	II	III	

NOTE:
1. See Section C. Implementation of Cycle, (preceding section) for a description of activities for Phases I, II and III.
2. All subject areas will be involved with curriculum development throughout the 1977-78 period. The Cycle mainly indicates a more intensive preview of the various areas as scheduled.
3. Phases I, II and III are flexible and will frequently overlap.
4. Implementation periods are adjustable and will vary with the level and magnitude of the respective subject area needs.

E. Finances

Various aspects of budgeting will serve an important part in curriculum development as specific areas are reviewed. Recommendations for the necessary equipment, materials and personnel should be programmed into the district budget. Provision will be made for necessary release time, costs of consultants, aides, substitutes and in-service training. Priorities will be given in the annual budgets to those instructional areas for which studies have been completed.

F. Evaluation

It is essential that all programs, or any part of them, be evaluated after they have been reviewed, studied, and implemented. Although evaluation should be a continuous process, the formal report and/or scope and sequence guide should be presented at the conclusion of the third phase.

RADNOR TOWNSHIP SCHOOL DISTRICT

MATHEMATICS CURRICULUM COMMITTEE

PROGRESS REPORT: May 29, 1979

Chronology

Summer 1978:	Preliminary work on scope & sequence
November 3, 1978	Initial meeting with PRIMES - Dr. Berger, Director attended by Dr. Crosby, Dr. Holton and Dr. Fitzpatrick This was an orientation meeting. The discussion centered on how PRIMES could contribute to mathematics curriculum development for Radnor Township School District.
November 6, 1978	PRIMES presentation to Mathematics Curriculum Committee. Recommendation for proposal to use PRIMES is unanimous.
November 13, 1978	Proposal to use PRIMES submitted to Dr. John C. Crosby, Superintendent for his approval.
November 28, 1978	Board of School Directors approves proposal for use of PRIMES to assist in mathematics curriculum development.
January 8, 1979	Mathematics Curriculum Committee meeting attended by Dr. Emanuel Berger, Director, PRIMES Orientation to PRIMES system and procedures. Initiate scope/sequence activities: - Determine what concepts to be taught each grade (grade level scope) - matching our scope and sequence with PRIMES. This was a necessary step for data processing of curriculum information - Examination of current practice using textbook computer printout. - Discussion on sequencing of skills. - Committee judgments on each concept as to pre/post grade level. Initial development of teaching hierarchy by grade level based on continuous progress. - Determine instructional responsibility by grade level: introduce, develop, master, review
February 5, 1979	Mathematics Curriculum Committee meeting attended by Dr. Berger Continued activities from previous meeting.

Chronology (continued)

February 5, 1979	Determination of the degree of importance of skills for individual students using a three point scale: Rating: 1 - basic skill: teach to all children 2 - important skill: not necessarily taught to all children 3 - enrichment skill: selective teaching
March 5, 1979	Continued work on determination of priority/skills for instruction.
April 2, 1979	Quantity and balance: Determination as to number of concepts/skills to be taught per grade level is reasonable and to check for curriculum balance (concepts).
May 14, 1979	Development of composite scope/sequence chart. Summarize all grade level decisions to insure curriculum completeness and consistency and to resolve discrepancies.
May 21, 1979	Additional meeting required to complete above step in the process.
May 29, 1979	Public meeting held. Parents, students and interested others invited to examine curriculum development to date. Question and answer session provided and suggestions received from those in attendance.
June 4, 1979	Dissemination of preliminary scope and sequence to teaching staff, administrative council and board of school directors for examination, comment and additional input.
June 18-22, 1979	Complete curriculum development PHASE I. Begin curriculum development PHASE II. During this week, it is hoped that the final curriculum document for the basic mathematics curriculum will be completed and ready for printing during the summer.
Fall 1979	Introduce basic mathematics curriculum to Radnor teaching staff.

WEST SHORE SCHOOL DISTRICT

REQUEST TO CONDUCT A PILOT PROJECT

Interest in piloting projects to examine alternative instructional programs/activities may be initiated at the piloting level and/or at the administrative level. The staff member initiating the pilot project should complete this form and submit it to the Director of Curriculum Services for review. Guidelines for conducting pilot projects in the West Shore School District should be followed closely.

Subject Content Area: ENGLISH, LEVEL III

Grade Level: 11 and 12

Instructional Material to be piloted: Basic Skills in English

Books 5 and 6, McDougal, Littell and Company

Purpose: To find an appropriate basic text for our Level III English students

Number of Students Involved: Cedar Cliff, 25; Red Land, 22

Names of Teachers Involved: Jean Fox and Mary Essig

Time Frame of Piloting Events (By month and year):

The Basic Skills in English text will be piloted the entire second semester of the 1981-82 school year.

Department heads and building principals will be informed of possible recommendation to purchase for the '82-'83 school year. (Mrs. Dyszel will meet with those involved December/January '81.)

Teachers involved with the pilot will evaluate the series April/May '82.

Anticipated Expenses of the Pilot Project (Be accurate):

Curriculum Materials: ~~McDougal, Littell, and Company will provide text-~~ books for our use. Only expense will be postage to return materials if WSSD decides not to purchase the program. If the pilot proves successful, purchase of

(CONTINUED)

In-Service: Mrs. Dyszel will meet with those involved periodically to assist in the pilot.

Others:

Expected Outcomes of the Pilot Project: It is hoped that Basic Skills in English will fill a void in our English program: providing a basic text that matches Curriculum Update Goals for Level 3 students.

Evaluation Procedure of the Pilot Project: Both teachers will provide a narrative evaluation of the text at the conclusion of the pilot.

Dr. Cormany will also assist in the evaluation.

SIGNATURES

Requesting Principal

December 22, 1981
Date Requested

Director of Curriculum Services

Date of Approval

th

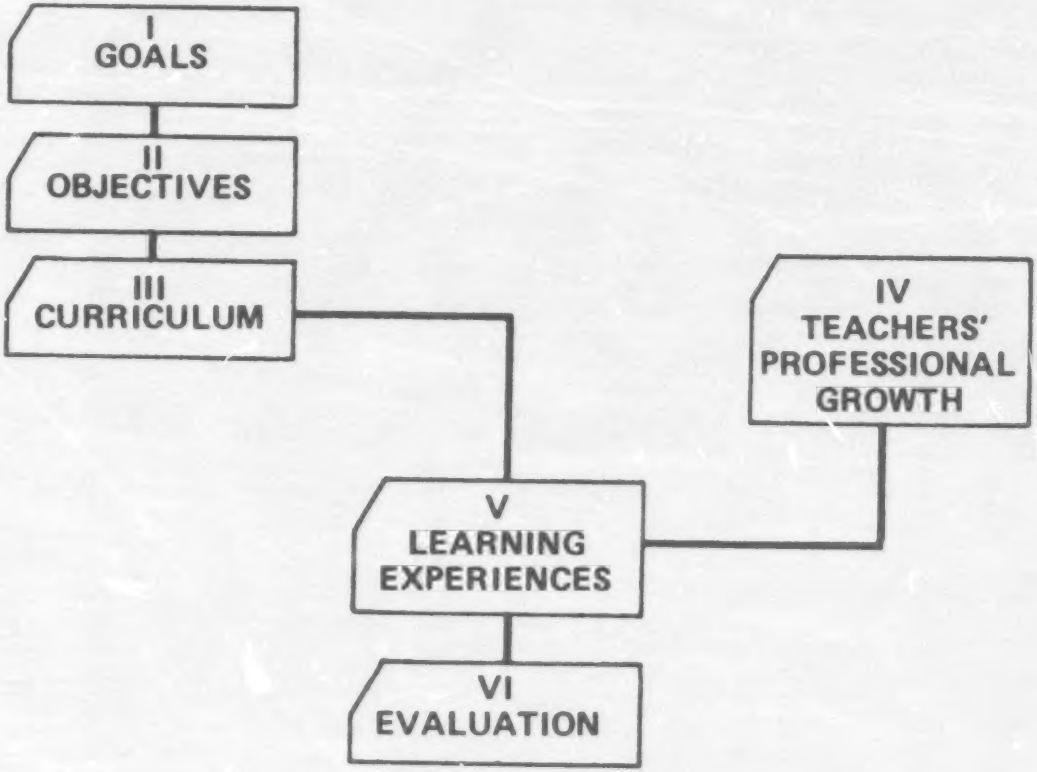
Appendix B:

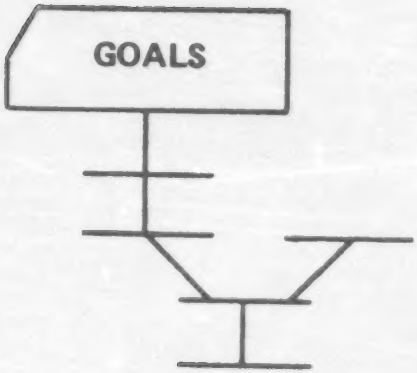
Forms

FORMS

1.	Transparency masters (22) for PCMP presentation.	Section I 2.1
2.	Needs assessment data summary/analysis (blank questionnaire forms)	Section II 3.1
3.	Budget	Section III 2.1
4.	"District Evaluation Program - Mathematics"	Section IV - Evaluation 1.1
5.	"Summary: District Evaluation Program - Mathematics	Section IV - Evaluation 1.3

PENNSYLVANIA COMPREHENSIVE MATHEMATICS PROGRAM

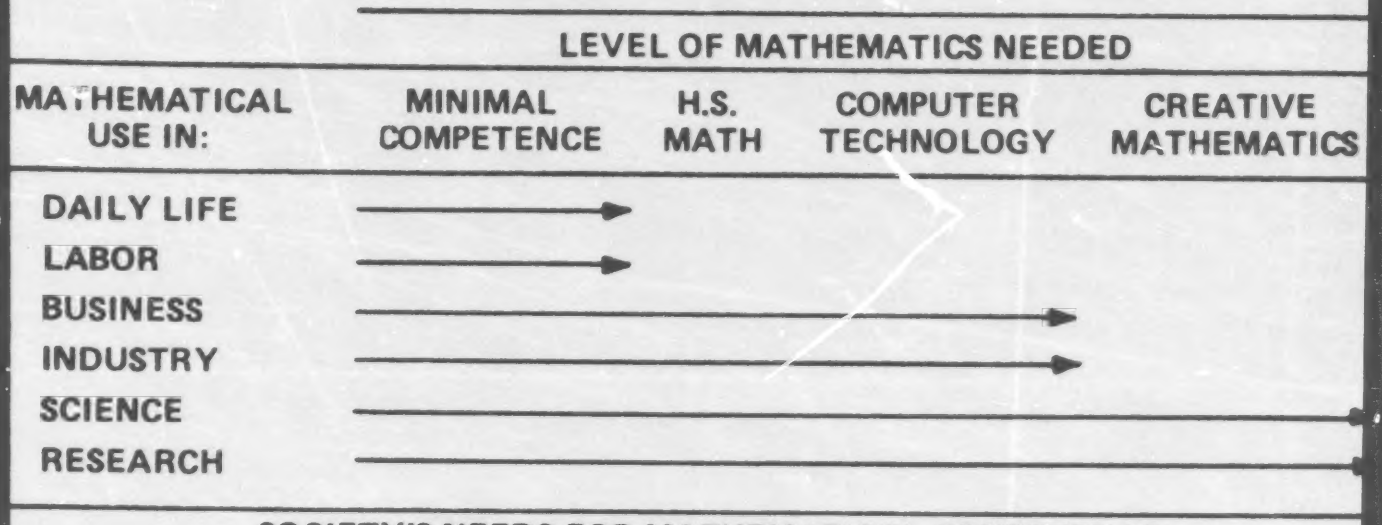


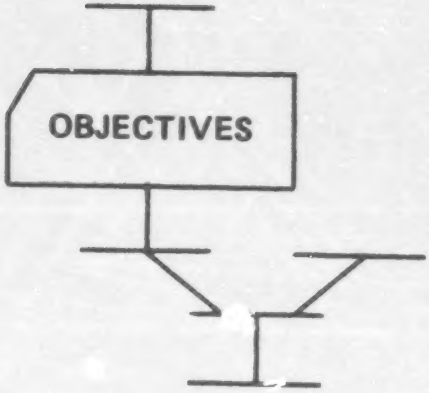


RESPOND TO THE DEMANDS OF THE 80'S AND REQUIRE COORDINATION OF ALL AVAILABLE RESOURCES.

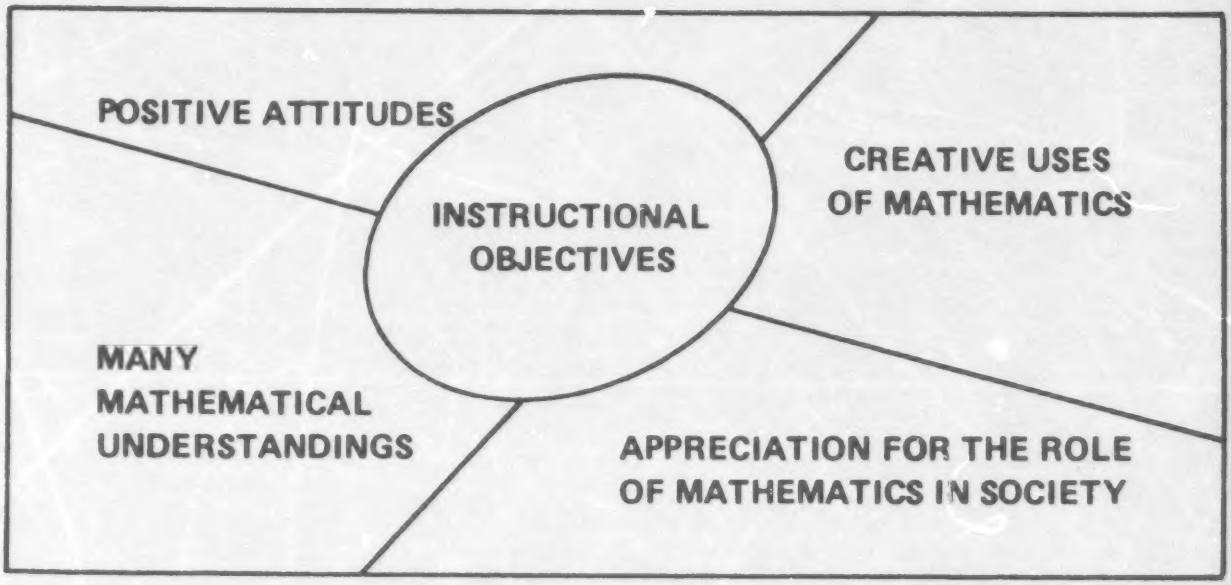
THE BASICS IN MATHEMATICS

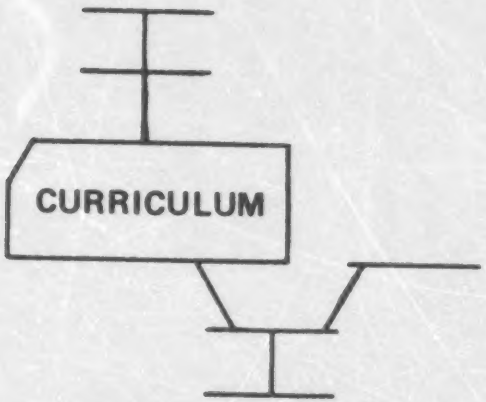
* UNDERSTANDING MATHEMATICAL CONCEPTS
* COMPUTATIONAL SKILLS
* APPLICATIONS AND PROBLEM SOLVING


LEVEL OF MATHEMATICS NEEDED
MATHEMATICAL USE IN:
MINIMAL COMPETENCE
H.S. MATH
COMPUTER TECHNOLOGY
CREATIVE MATHEMATICS
DAILY LIFE
LABOR
BUSINESS
INDUSTRY
SCIENCE
RESEARCH
SOCIETY'S NEEDS FOR MATHEMATICAL COMPETENCE



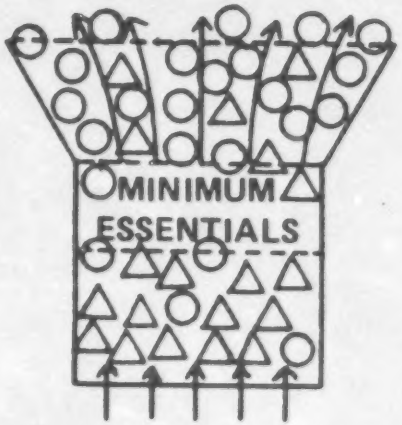
AN ESSENTIAL ELEMENT OF AN EFFECTIVE MATHEMATICS PROGRAM.


POSITIVE ATTITUDES
INSTRUCTIONAL OBJECTIVES
CREATIVE USES OF MATHEMATICS
MANY MATHEMATICAL UNDERSTANDINGS
APPRECIATION FOR THE ROLE OF MATHEMATICS IN SOCIETY



ALL STUDENTS CAN AND SHOULD LEARN MATHEMATICS FROM ELEMENTARY SCHOOL THROUGH HIGH SCHOOL.

STUDENTS LEAVE THE PCMP WITH GREAT VARIABILITY IN UNDERSTANDING, SKILL, AND APPRECIATION FOR MATHEMATICS.



STUDENTS ENTER THE PCMP WITH VARIOUS NEEDS, INTERESTS, AND APTITUDES FOR MATHEMATICS.

△ PRE-DETERMINED OBJECTIVES

○ INDIVIDUAL DIFFERENCES

BROAD CURRICULUM

IN SCHOOL AT HOME IN THE COMMUNITY	FORMAL INFORMAL	CONCRETE ABSTRACT	OTHER SCHOOL SUBJECTS
TRIVIAL SIGNIFICANT	THEORETICAL PRACTICAL	THE LANGUAGE OF MATHEMATICS	LIFE EXPERIENCES CAREER CHOICES

EVERY TEACHER AND EVERY PARENT IS A TEACHER OF MATHEMATICS.

CHARACTERISTICS OF A PCMP SCHOOL

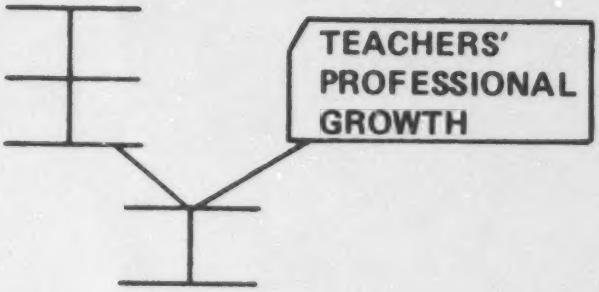
PROGRAM

- INSTRUCTIONAL OBJECTIVES EMBEDDED IN BROAD GOALS; UNDERSTANDINGS, ATTITUDES,
- CREATIVITY, APPRECIATION, BALANCE; COMPUTATION, UNDERSTANDINGS,
- APPLICATIONS

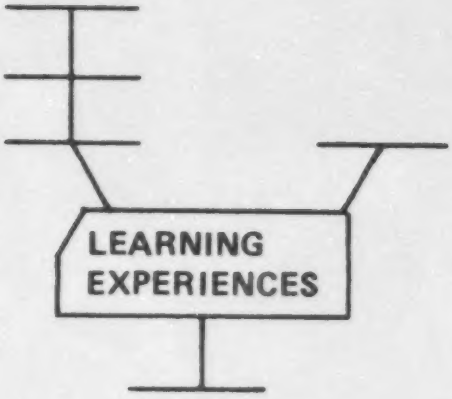
EACH TEACHER COMMITTED TO PERSONALIZE/ INDIVIDUALIZE INSTRUCTION

IMPLEMENTATION

- FACULTY COMMITTED TO IMPROVE PROGRAM; SET PRIORITIES AND TIME SCHEDULES
- PARENTS, FACULTY AND ADMINISTRATION COMMITTED TO PCMP
- ACTIVE, WORKING RELATIONSHIP; SCHOOL, DISTRICT, IU, PDE
- CONTINUOUS EVALUATION OF EACH COMPONENT OF PCMP



A REQUIREMENT FOR IMPROVEMENT AND NEW DIMENSIONS IN CURRICULUM, INSTRUCTION AND EVALUATION.

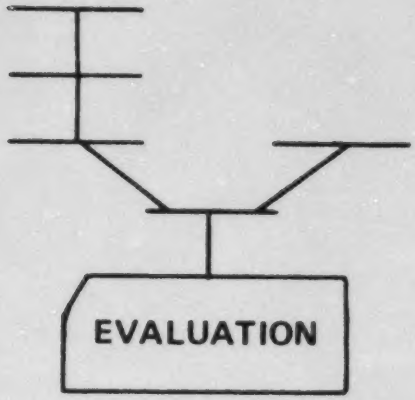


DESIGNED FOR THE UNIQUE TALENTS, INTERESTS AND ABILITIES OF INDIVIDUAL STUDENTS.

CURRICULUM

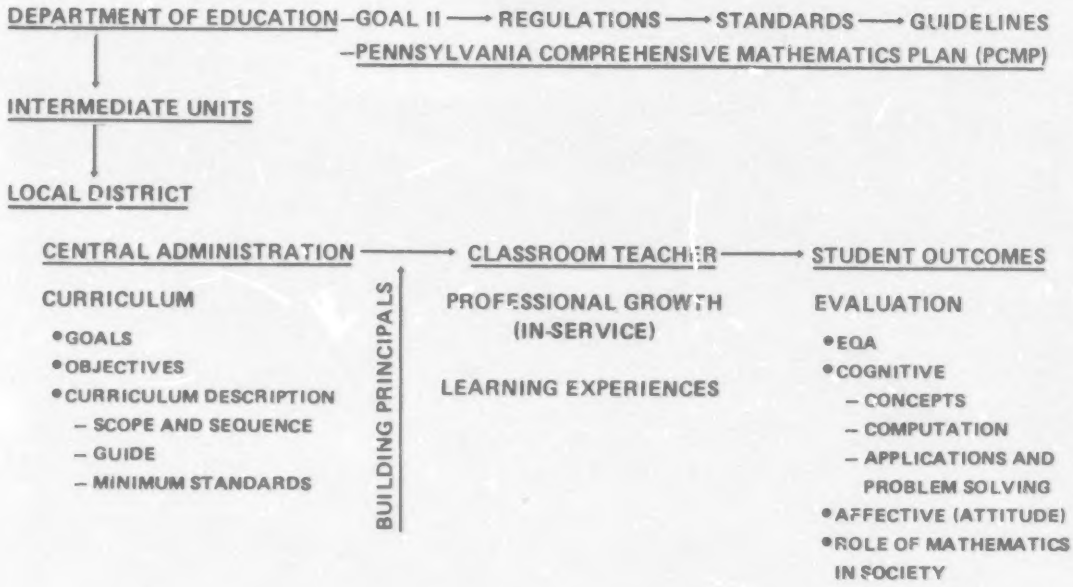
PLANNED ✓ DETERMINED BY LOCAL DISTRICT USING FEDERAL, STATE AND IU RESOURCES

ACTUAL ✓ ADAPTED BY TEACHERS TO INTERESTS, NEEDS AND ABILITIES OF INDIVIDUAL STUDENTS



– A VARIETY OF ASSESSMENT DEVICES WITH DIFFERENT STUDENT POPULATIONS.

– CONTINUAL ASSESSMENT OF PROGRAM GOALS.


DEPARTMENT OF EDUCATION
GOAL II
REGULATIONS
STANDARDS
GUIDELINES
PENNSYLVANIA COMPREHENSIVE MATHEMATICS PLAN (PCMP)
INTERMEDIATE UNITS
LOCAL DISTRICT
CENTRAL ADMINISTRATION
CLASSROOM TEACHER
STUDENT OUTCOMES
CURRICULUM
•GOALS
•OBJECTIVES
•CURRICULUM DESCRIPTION
– SCOPE AND SEQUENCE
– GUIDE
– MINIMUM STANDARDS
BUILDING PRINCIPALS
PROFESSIONAL GROWTH (IN-SERVICE)
LEARNING EXPERIENCES
EVALUATION
•EQA
•COGNITIVE
– CONCEPTS
– COMPUTATION
– APPLICATIONS AND PROBLEM SOLVING
•AFFECTIVE (ATTITUDE)
•ROLE OF MATHEMATICS IN SOCIETY

PILOT PCMP

* ELITE LEADERSHIP
* PDE SERVE DISTRICT: NETWORK–IU, HIGHER EDUCATION AND LEA
* POOL RESOURCES AND EFFORTS–COORDINATION
* SCHOOL IMPROVEMENT PLANNING
* INFORMATION EXCHANGE–CLEARINGHOUSE
* DISCRETIONARY FUNDS

REQUIREMENTS

* BOARD APPROVAL
* COMMITTEE
* PLAN OF ACTION
* BUDGET

BOARD APPROVAL

PLAN – BUDGET – REPORTS

"IT IS RESOLVED THAT _____ SCHOOL DISTRICT PARTICIPATE IN THE IMPLEMENTATION OF THE PENNSYLVANIA COMPREHENSIVE MATHEMATICS PLAN (PCMP) AND THAT THE IMPLEMENTATION BE SUPPORTED BY A BUDGET NOT TO EXCEED $_____.

SIGNATURE _____

DATE _____

COMMITTEE

SELECTION CRITERIA
- GRADE LEVELS
- BUILDINGS
- SPECIAL PROGRAMS
- SUPPORT SERVICES

RESPONSIBILITIES
- CONDUCT NEEDS ASSESSMENT
- ESTABLISH PRIORITIES
- DEVELOP/IMPLEMENT PLAN OF ACTION
- PREPARE BUDGET
- CONDUCT ORIENTATION
- PLAN/CONDUCT EVALUATION
- PLAN/CONDUCT DISSEMINATION

PROCEDURES
- SET UP SCHEDULE OF REGULAR MEETINGS
- WRITE A REPORT OF PROCEEDINGS OF ALL MEETINGS
- MAINTAIN FILE OF ALL ACTIVITIES

PLANNING

• ORIENTATION
COMMITTEE
ADMINISTRATION
STAFF
• NEEDS ASSESSMENT
STAFF, ADMINISTRATION
STUDENTS
PARENTS, COMMUNITY
• PRIORITIES
GOALS
OBJECTIVES
CURRICULUM
TEACHERS' PROFESSIONAL GROWTH
LEARNING EXPERIENCES
EVALUATION
• PLAN OF ACTION

PLAN OF ACTION
CURRICULUM

THE CURRICULUM FOR THE PROJECT WILL BE DESCRIBED IN A CONTINUUM OF CONCEPTS AND SKILLS, THE CURRICULUM GUIDE. THE GUIDE WILL CONTAIN THE CRITICAL SKILLS TO BE DIAGNOSED AND TAUGHT IN THE INSTRUCTIONAL PROGRAM. IT WILL SERVE AS THE REFERENCE DOCUMENT FOR LESSON PLANNING.

ACT. REF. #	TASK	PERSON/ AGENCY	DATE
1.1	1. DEVELOPMENT		
	1.1 APPOINT THE COMMITTEE CONSISTING OF THE PROJECT STAFF TEACHERS AND AN ADMINISTRATOR.		
	1.2 REVIEW AND REVISE CONCEPTS/SKILLS IN PRESENT CURRICULUM GUIDE.		
	1.3 IDENTIFY THE CRITICAL SKILLS GRADES 4-8.		
	1.3.1 USING CURRENT LEBANON GUIDE SCOPE CHART AND PRIMES LIST OF CAL CODES (MATRIX), CHECK CONCEPTS/SKILLS CURRENTLY TAUGHT; CIRCLE CRITICAL SKILLS.	LSD MATH TEACHERS GR. 4-8	

RESOURCES/BUDGET

CODE	CATEGORY	AMOUNT ($; IN KIND)
0213	TEACHER SALARIES (RELEASED TIME)	
0219	SECRETARIAL SALARY	
0221	TEXTBOOKS	
0222	TEACHING SUPPLIES	
0223	LIBRARY BOOKS AND SUPPLIES	
0224	AUDIO VISUAL MATERIALS	
0231	INSERVICE EDUCATION	
0239	TRAVEL	
0250	CONTRACTED SERVICES	
1243	INSTRUCTIONAL EQUIPMENT	

District: _____ Date: _____

Budget: Curriculum _____
Staff Development - A ____; T _____
Learning Experience _____
Evaluation _____

RESOURCES/BUDGET

CODE	CATEGORY	AMOUNT ($; IN KIND)
0213	TEACHER SALARIES (RELEASED TIME)	
0219	SECRETARIAL SALARY	
0221	TEXTBOOKS	
0222	TEACHING SUPPLIES	
0223	LIBRARY BOOKS AND SUPPLIES	
0224	AUDIO VISUAL MATERIALS	
0231	INSERVICE EDUCATION	
0239	TRAVEL	
0250	CONTRACTED SERVICES	
1243	INSTRUCTIONAL EQUIPMENT	

TOTAL:

Signature: _____

Approved: _____ Date: _____
Superintendent

APPENDIX B: Forms

Section IV: Action Plan - Evaluation Form

DISTRICT EVALUATION PROGRAM - MATHEMATICS

Level: K-6 ___; 7-9 ___; 10-12 ___

Instructions: Complete this form for each evaluation instrument or procedure.

Test Name _____ Form ____ Level(s) ____

Publisher _____ Copyright _____

Student Population _____ Frequency _____

Purpose(s):

1.

2.

Scored by: _____

Location of Results _____

Availability/Accessibility _____

_____

District Resource Person _____ Year Instituted _____

This test/procedure should be: continued as is _____; discarded _____;

replaced _____; other (specify) _____

_____

Discuss recommended changes:

1.

2.

Name: _____

Date: _____

Level: K-6 ___
7-9 ___
10-12 ___

Section IV: Action Plan - Evaluation

SUMMARY: DISTRICT EVALUATION PROGRAM - MATHEMATICS

Type Instrument	Student Population	Frequency	Location: Files	Uses	Accessibility	Comments
Standardized 1. 2. 3.						
Curriculum-related						

SUMMARY: DISTRICT EVALUATION PROGRAM - MATHEMATICS - Continued

Type Instrument	Student Population	Frequency	Location: Files:	Uses	Accessibility	Comments
Diagnostic						
Interviews						
Observation						
Individual Projects (e.g. science fair)						

Appendix C:

References

REFERENCES

1.	Anderson, Lorin W. "Session I: Overview Presentation - Teachers, Teaching and Educational Effectiveness" unpublished paper. Title I Dissemination and Program Improvement East Cost Seminar, January, 1982.	Section IV - Learning Experience 1
2.	Central Susquehanna Intermediate Unit. PRIMES Content Authority List, K-8; Algebra 1, 2; Geometry; Trigonometry. 1974, 1981, 1982.	Section IV - Goals, Objectives, Curriculum
3.	Central Susquehanna Intermediate Unit. PRIMES Curriculum Development Manuals I, II, III, IV.	Section IV - Goals, Objectives, Curriculum
4.	EPIE Materials Reports	Section IV - Learning Experience 2
5.	ERIC Clearinghouse for Science, Mathematics and Environmental Education. "An Interpretive Summary from the NCTM Project 'Priorities in School Mathematics'". ED 184891.	Section IV - Goals, Objectives, Curriculum
6.	Good, T. L. "Teacher Effectiveness in The Elementary School". Journal of Teacher Education. p. 52. March/April 1979.	Section IV - Learning Experience 1
7.	Good, T. L. and D. A. Grouws. "Teaching and Mathematics Learning". Educational Leadership. p. 39. October 1979.	Section IV - Learning Experience 1
8.	Guerriero, Carl A. "Research Tips for Teaching the Low Achiever" in PCTM Journal, Fall 1981, pp. 17-24.	Section IV - Learning Experience 1
9.	IRT Occasional Paper No. 44, "Helping Teachers Use Research Findings: The Consumer Validation Process", Michigan State University. IRT Publications, 252 Erickson, MSU, East Lansing, MI 48824 ($2.50)	Section IV - Professional Growth
10.	McGraw-Hill/CTB. ORBIT Objectives.	Section IV - Goals, Objectives, Curriculum
11.	Mathematics Curriculum Guides: Lebanon, Marple Newtown, West Perry and William Penn School Districts.	Section IV - Goals, Objectives, Curriculum

12.	Mathematics for Georgia Secondary Schools. Division of Curriculum Services, Georgia Department of Education, 198[illegible]	Section IV
13.	National Council of Supervisors of Mathematics. "Position Paper on Basic Mathematical Skills". 1977.	Section IV - Goals, Objectives, Curriculum
14.	National Council of Teachers of Mathematics. An Agenda for Action: Recommendations for School Mathematics of the 1980s. 1980.	Section IV - Goals, Objectives, Curriculum
15.	National Council of Teachers of Mathematics. Priorities in School Mathematics: Executive Summary of the PRISM Project. 1981.	Section IV - Goals, Objectives, Curriculum
16.	National Institute of Education. Conference on Basic Mathematical Skills and Learning: Volume I: Contributed Position Papers. Euclin, Ohio, 1975.	Section IV
17.	Organization for the Essentials of Education. "The Essentials of Education". 1978.	Section IV - Goals, Objectives, Curriculum
18.	PDE. Approaching the Research on Effective Schools and Effective Classrooms. 1982.	Section IV - Learning Experience 1
19.	PDE. Diagnostic-Prescriptive Mathematics: Instructor Manual. 1982.	Section IV - Goals, Objectives, Curriculum
20.	PDE. PCMP - Pennsylvania Comprehensive Mathematics Plan: Direction for the 80's. 1980.	Section I, II, III, IV
21.	Success Through Coordination: A Hands-On Guide to the Coordination of Basic Skills Efforts. U.S. Department of Education Basic Skills Improvement Program. November 1981. CFI #300-80-0934.	Section I, II, III, IV
22.	Textbook publishers. Mathematics textbook or series scope and sequence charts.	Section IV - Goals, Objectives,